

**Abstract:**

The present invention provides biomolecules and the use of these biomolecules for the differential diagnosis of pancreatitis and/or pancreatic cancer. In particular the present invention provides methods for detecting biomolecules within a test sample as well as a database comprising of mass profiles of biomolecules specific for healthy subjects, subjects having a precancerous lesion of the pancreas, subjects having a pancreatic cancer or a metastasised pancreatic cancer or subjects having pancreatitis. Furthermore, the present invention provides methods for the characterization of said biomolecules using gas phase ion spectrometry. In addition, the present invention provides methods for the identification of said biomolecules provided that they are proteins or polypeptides. The invention further provides kits for the differential diagnosis of pancreatitis or pancreatic cancer.